

Amendments to the Specification

Please replace the paragraph at page 7, lines 9-21, with the following amended paragraph:

Figure 1 is a representation of the displacement of an object fixed in an image pair and, thus, illustrates the problem addressed by the method of the invention. Briefly, motion estimation involves determination of the apparent displacement of an object-10, such as the rear wheel of an automobile 12, between ~~views fixed~~ a location 10 of the object in a first or reference image 14 and a location 11 of the object in a second or target image 16. In FIG. 1, the location 13 in the second image 16 corresponds to the object location 10 in the first image 14. Each of the images 14 and 16 is either digital or digitized and defined over a pixel matrix that may be broken up, for convenience of illustration, into a plurality of blocks of two-dimensional pixel arrays 18, ~~18~~ 19.

Please replace the paragraph at page 7, line 22, through page 8, line 4, with the following amended paragraph:

Analysis of displacement of the object locations 10 and 11 in-between the two images 14 and 16 essentially involves the determination of a vector \mathbf{d}_m defining magnitude and direction on a two-dimensional image field. The vector \mathbf{d}_m is located within a search region 20 in the second image 16 and relates the location 10 of the object-10 in the first ~~or reference frame~~ image 14 to ~~that~~ the location 11 of the object in the second ~~or target frame~~ image 16.

Please replace the paragraph at page 15, lines 10-16, with the following amended paragraph:

Figure 4 is a block diagram of an embodiment of a system ~~10~~ in accordance with the invention for estimating object displacement in image pairs. The system includes a search region generator ~~12~~ 25. Such apparatus is arranged to perform functions discussed particularly with reference to steps S-1 through S-3 of the method outlined in the preceding figures.

Please replace the paragraph at page 15, line 17, through page 16, line 1 with the following amended paragraph:

The search region generator ~~12-25~~ receives, as inputs, the first image and the second image as well as the above-described search parameters. These are employed to generate a plurality of search regions. Such search regions are applied to an object displacement estimator ~~1426~~. Such apparatus is arranged to perform, in particular, the function described with reference to step S-4 of the method of the preceding figures.

Please replace the paragraph at page 16, line 26, through page 17, line 5, with the following amended paragraph:

The output of the object displacement estimator ~~1426~~, a corresponding plurality of object displacement estimates, is applied to a validity measurer ~~1628~~. Referring to the preceding figures and accompanying discussion, the validity measurer ~~16-28~~ comprises apparatus arranged to perform the function particularly described with reference to step S-5 of the method outlined in Figure 2. That is, the validity measurer ~~16-28~~ provides a plurality of validity measurements, corresponding to a plurality of object displacement estimates, that are then provided, as inputs, to a validity comparator ~~1830~~. The validity comparator ~~3018~~ is arranged to make a determination of the best object displacement estimate 32 in accordance with steps S-6 and S-7 of the method described above. In the event that none of the plurality of validity measurements exceeds a predetermined cutoff value, a new set of search parameters is input to the search region generator ~~12-25~~ and, after subsequent data processing by the object displacement estimator ~~14-26~~ and the validity measurer ~~1628~~, a new plurality of validity measurements is input to the validity comparator ~~1830~~. Assuming that at least one of the new plurality of validity measurements now exceeds the predetermined cutoff value, a best object displacement estimate 32 is determined by the validity comparator ~~18-30~~ and provided as the displacement of the object between the first and second images.